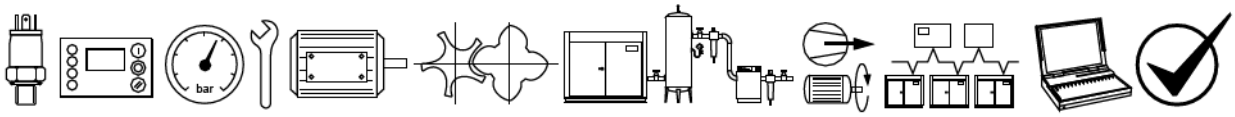

metacentre™

Cyber Console

Contents:

Also Refer to the Metacentre™ TX Hardware Technical Manual (MANY0710A)

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1: Introduction

This manual is intended to provide users of the Metacentre™ Cyber Console with an understanding of its intended use, operation and functions.

- GUI Overview (Graphical User Interface)
- Navigation
- Operation
- Configuration
- Administration
- Simple Troubleshooting

For product support relating to the Metacentre™ TX hardware, refer to the respective hardware manual.

This manual can be downloaded from **www.metacentre.eu**

This manual is not intended to be a resource for the configuration of IP addresses or routing of same over local area networks (LAN) or wide area networks (WAN). Although static IP or DHCP assigned IP options are discussed in this manual, no advice in relation to their use can be offered. Contact your network administrator.

Troubleshooting IP address conflicts, routing, firewall or other LAN, WAN related issues. Contact your network administrator

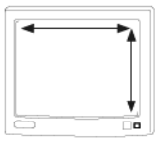
This manual is not a user guide to Internet Explorer or Mozilla Firefox. It is assumed the reader has an understanding of the respective browser software / environment. Refer to the respective browser products resources.

1.1 Computer Requirements

Metacentre™ Cyber Console is a high performance, software GUI console.

Both firmware and application layer including GUI associated with the Metacentre™ Cyber Console are hosted on the Metacentre™ TX unit and not on the computer. Computer requirements are therefore limited to running Internet Explorer 7+ or Mozilla Firefox 2+ with permissible access to the Metacentre™ TX product's assigned IP address.

Cyber Console has been optimised for use on the aforementioned browser products. Whilst other browser products (e.g. Chrome, Opera, and Safari) may be employed successfully, these browser platforms are unsupported.



Metacentre™ Cyber Console is designed to be viewed on a PC screen with a resolution of 1280 x 1024 pixels (SXGA). A screen with a resolution of 1280 x 800 pixels (WXGA) will give good results with vertical scrolling required for some screen pages. For screen resolutions lower than SXGA standard it will be necessary to use scroll bars to move the screen around the visible view area.

Cookies:
Although Cyber Console is hosted on the Metacentre™ TX platform, and not on the PC, all user specific language and preference settings are stored on the PC as a cookie. This is common practice for web based applications and your PC will be setup to accommodate for this. All 'cookies' (preference settings files) will be stored on your PC in a special memory area dedicated for this purpose. If the 'cookies' on your PC are deleted the Cyber Console will revert to default language and preference settings.

1.2 Metacentre™ System Hardware

Metacentre™ Cyber Console is a dedicated, software GUI for use with the Metacentre™ hardware platform incorporating a Metacentre™ TX host interface and communication gateway. The Cyber Console provides visualisation and control of Airbus RS485 networked Metacentre™ management system and AirMaster™ compressor controller products. It is important that you're Metacentre™ and AirMaster™ hardware platforms are installed and commissioned correctly prior to configuring your Metacentre™ Cyber Console.

1.3 Metacentre™ TX Firmware Update

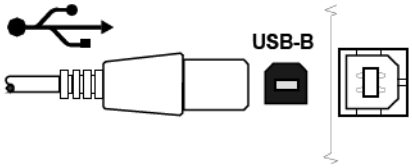
The Metacentre™ TX firmware may require an update to support Metacentre™ Cyber Console. To do this you will need a firmware HEX file and a USB 'A' plug type to 'B' plug type cable (not supplied) and access to both a computer and the Metacentre™ TX (consult your Metacentre™ dealer where necessary).

- The firmware HEX file may be sent 'zipped' or otherwise compressed. Extract or uncompress the file before proceeding.

- The firmware HEX file (for example TXMETAWS_EW01.BIN) must have the version number (for example '_EW01') removed to leave just the base file name (TXMETAWS.BIN).

Ensure the Metacentre™ TX is powered.

Connect the computer USB port to the Metacentre™ TX hardware USB port.



The Metacentre™ TX will appear as a removable mass storage device similar to a USB memory stick for example. Use Windows Explorer to locate the Metacentre™ TX 'UPDATE' folder. Copy the firmware update '.BIN' file to the 'UPDATE' folder.

Once complete, disconnect the USB cable from the Metacentre™ TX.

The Metacentre™ TX will automatically begin the update process; LED 3 of the Metacentre™ TX will flash. Once complete, the Metacentre™ TX will reboot automatically.

The update process is complete.

1.4 Connectivity with the Metacentre™ Cyber Console

Connection with Metacentre™ Cyber Console is as simple as browsing the World Wide Web. With a suitable computer equipped with Internet Explorer 7+ or Mozilla Firefox 2+ and permissible access to the Metacentre™ TX product's assigned IP address, simply enter the IP address in the browsers address bar, click the enter key and the Metacentre™ Cyber Console's login screen will load within your browser environment.

(!) Permissible access with the Metacentre™ TX product's assigned IP address is dependent on a users access rights on the LAN/WAN where the Metacentre™ TX product is located.

1.5 Procedure to Format and Update the SD Card

Preparation:

- Uncompress (Unzip) the 'SD_card.zip' folder and copy the contents to a folder on your PC hard drive (i.e. to C:\SD CARD)
- Using Notepad open and modify the "def_net.js" file to set to the clients IP settings. Remember to save the modification.
- Uncompress (Unzip) the "TXMETAWS_E0#.zip" folder and copy to your PC hard drive (i.e. C:\Firmware)

To Format The SD Card:

- Connect PC to TX box using USB connection. The TX box will be identified as a 'Mass Storage Device' in Windows Explorer.
- Right mouse click on the Mass Storage device and select 'Format' from the menu.
- Make sure the File System is set to 'FAT'.
- Click 'Start' to format the SD Card.

Updating the SD Card:

- Copy the SD card files from your PC's hard drive (i.e. from C:/SD CARD folder) to the 'Mass Storage Device' (TX Box SD Card).
- Copy by selecting all SD card files (including the "INI" & "UPDATE" folders), right mouse click and select 'Send to' from the menu; select the 'Mass Storage Device' (TX Box SD Card).

Note: Ensure the original zip file is not copied to the SD card.

1.6 SD Card Contents Overview

<DIR> **ini**
Folder where factory default "user accounts" and "Ethernet port" files are restored when TX Box SW1 or SW2 is pressed for 5 sec.

<DIR> **UPDATE**
Folder where binary file (TXMETAWS.BIN) is placed for firmware updates. The file will automatic be removed from this folder on completion of successful firmware update.

DEFCXX.JS
Webpage JavaScript (Holds configuration compressors)

DEFIO01.JS
Webpage java script (Holds configuration I/O page1)

DEFIO02.JS
Webpage JavaScript (Holds configuration I/O page2)

DEFIO03.JS
Webpage JavaScript (Holds configuration I/O page3)

DEFNET.JS
Webpage JavaScript (Holds configuration Ethernet port)

DEFSYS.JS
Webpage JavaScript (Holds configuration management unit)

EVENTS.TXT
Holds Log events 1…500

EVENTS2.TXT
Holds Log events 500…1000

LOGDAILY.TXT
Logged data (current uncompleted day; updated every minute)

LOGDAY01.TXT - LOGDAY30.TXT
Logged data per day (01=yesterday, 02=2days ago,…up to 30)

LOGAVG01.TXT – LOGAVG30.TXT
Averaged logged data per day (used for graph)

LOGRP01.TXT – LOGRP30.TXT
Averaged logged data per day (used for report)

TXTP*.XML
Webpage language translations

HTMC*.XML
Webpage data definitions

USER_LOG.TXT
Holds user accounts

VERSION.TXT
Holds firmware version, article name and serial number

AJAX.JS
Webpage JavaScript (also contains webpage version)

***.HTM**	Webpage html
***.JS**	Webpage java script
***.CSS**	Webpage style sheet
***.JPG**	Webpage jpeg image
***.GIF**	Webpage gif image

Note: The micro SD Card supports the Cyber Console GUI being displayed in your browser window and other resources that may be used from time to time by Cyber Console & or other related products. It is therefore useful to be familiar with the SD Card contents and their intended purpose.

Occasions to copy or update the contents of the micro SD card should be infrequent!

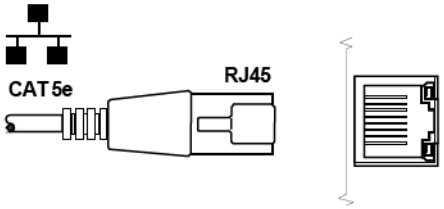
2: Configuration of Metacentre™ Cyber Console

2.1 Item Checklist

a) Metacentre™ system installation including Metacentre™ TX
b) Computer, display, keyboard and mouse / pointer
c) Internet Explorer 7+ or Mozilla Firefox 2+ installed
d) CAT5 TCP/IP network cable

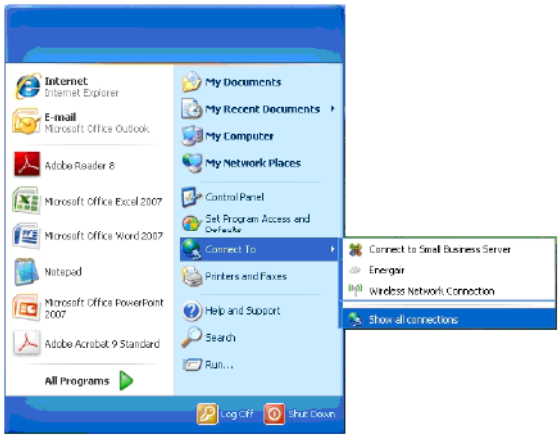
2.2 Creating a local area network (LAN) consisting of a computer and a Metacentre™ TX.

Connect the network cable to the computer's network port and the Metacentre™ TX network port.

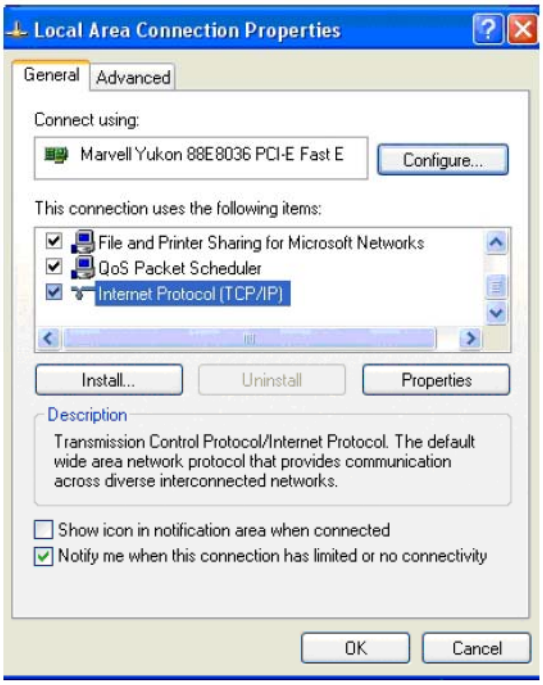


To simplify the initial configuration of the Metacentre™ Cyber Console, we recommend creating a LAN consisting of a computer and the Metacentre™ TX.

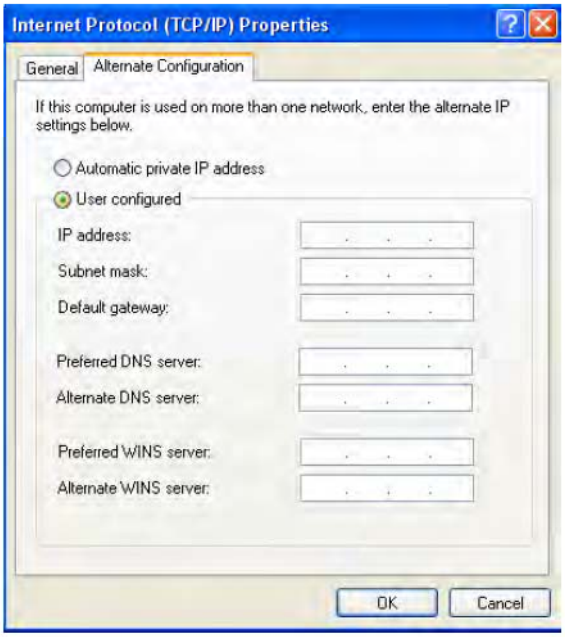
Navigate to the computer's 'Network Connections' page. To do this from the computer's desktop, choose 'start', navigate to 'connect to' and choose 'show all connections'. Choose 'Local Area Connection' and 'double click'



The local area connection properties box will appear.



Select 'Internet Protocol (TCP/IP)' and click 'properties'.



Select 'Alternative connection' and then select 'User configured'. Assign the computer an IP address of **192.168.1.3** and a sub mask of **255.255.255.0** – leave all other settings blank.

The Metacentre™ TX is assigned a default IP address of:

192.168.1.2

When complete, click 'OK'

2.3 Installation and commissioning of the Metacentre™ TX.

Install and Commission the Metacentre™ TX using the guidelines provided in the Metacentre™ TX Technical Manual.

Example Metacentre™ System:

Throughout this manual, a configuration consisting of a Metacentre™ SX management system, 4 AirMaster™ and 2 Metacentre™ integrated air compressors and 2 Metacentre™ I/O devices with distributed analogue and digital inputs / outputs has been used.

2.4 Default Accounts

Metacentre™ Cyber Console has three account types.

VIEW: view only, unable to make any operational adjustments or implement any changes; no access to configuration.

User Name: **view**
Password: **pwview**

USER: able to make operational adjustments; no access to configuration.

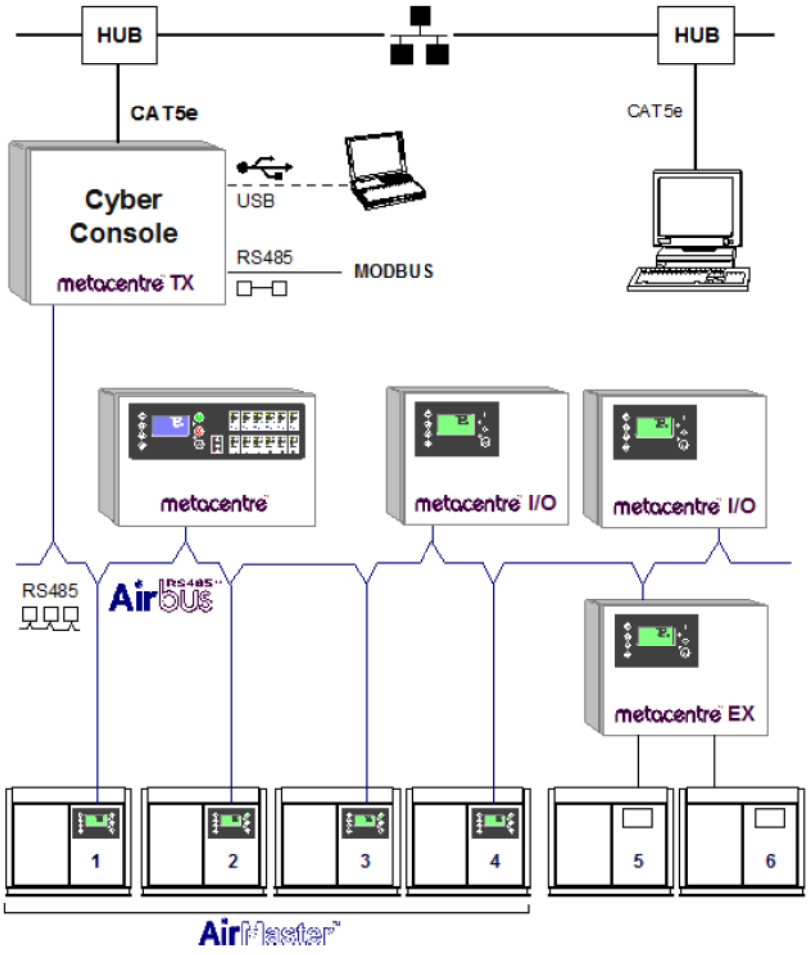
User Name: **user**
Password: **pwuser**

ADMIN: full access including configuration.

User Name: **admin**
Password: **pwadmin**

Login User Name and Password is case sensitive.

As a security precaution, default login names and passwords should be changed.

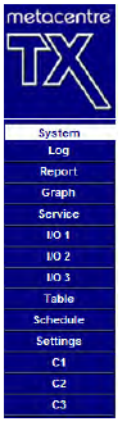


3: Metacentre™ Cyber Console Navigation

3.1 System Overview

Metacentre™ Cyber Console is a high performance, software GUI console featuring HTML / Java screens. Once logged in, the GUI 'system' tab page will load (shown below).

The Metacentre™ Cyber Console is able to accommodate for systems with up to 12 compressors, 40 additional analogue and 48 additional digital indications, from distributed system I/O.



Navigation is via the 'blue' navigation area to the left of the browser window. The navigation area is present in all screen views.

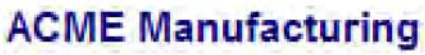
Using the navigation area it is possible to access any screen from any other screen, there is no fixed hierarchical structure.

 Heartbeat

The heartbeat symbol, shown adjacent to the Logout button on most pages, indicates good internet connectivity with the remote Metacentre™ TX unit.

 Logout

① Always Logout when done. Never close the browser without logging out of Cyber Console first. Failure to logout may inhibit access for other users.



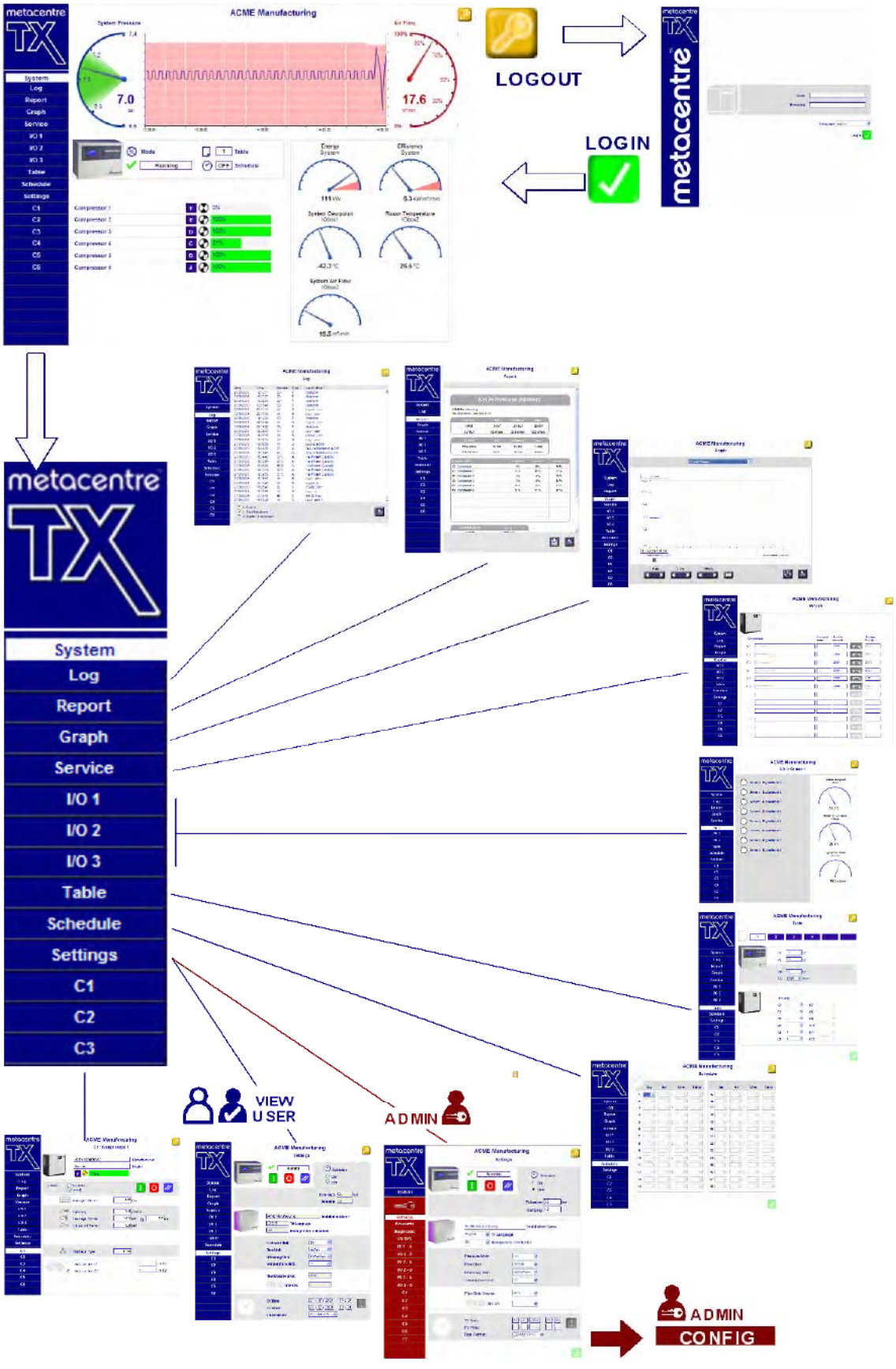
The Installation/Site name (editable) is displayed at the top of every screen view.

Metacentre™ Cyber Console is visually a collection of HTML / Java screens, which; on request from a logged in 'user' are returned and loaded to that user's browser environment and viewed as web pages. In addition to HTML / Java screens, data from the Metacentre™ TX memory, or read directly from the AirBUS RS485 system network (the field bus network interconnecting all Metacentre™ system hardware) is added to form the completed 'page load'. As a consequence and in addition to typical factors which can affect webpage load times such as packet routing of data across LAN's, firewalls, network hubs etc, page load times will increase relative to the amount and type of data being requested, returned and loaded to a users browser environment (For example: a 1 week graph will take longer to load than a 1 hour graph).

① Take time to understand 'average page load' times in your specific installation environment and allow page loads to complete prior to proceeding with additional page load requests. (For example: navigating to a new screen).

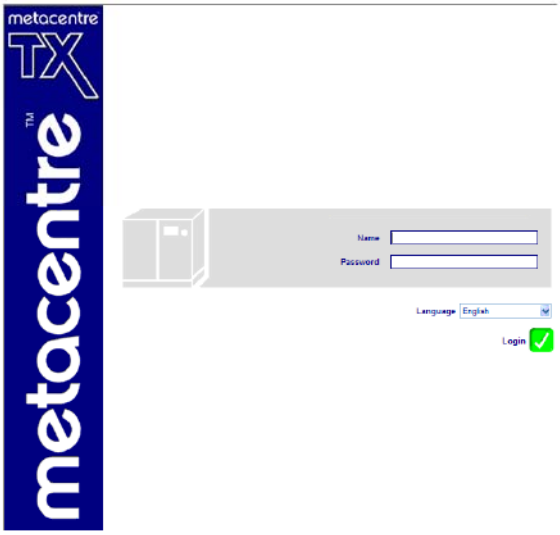
① For trouble shooting page load times, establish a LAN connection as described in Section 2 of this manual and proceed to establish 'peer' to 'peer' page load times. Revert back to your normal LAN configuration. Any variation in page load times above those experienced in the 'peer' to 'peer' arrangement is a consequence of the LAN environment and not the Metacentre™ Cyber Console. Consult your network administrator.

Metacentre™ Cyber Console - Site Map



3.2 Login

LOGIN



During installation and commissioning of the Metacentre™ TX, a network IP address was assigned to the device. This address may be a static IP address (e.g. http://192.168.1.2. (Default)), or a DHCP assigned domain name (e.g. http://compressedair.com).

Enter the IP address or domain name in the browser's address bar, click the enter key and Metacentre™ Cyber Console's login screen will load within your browser environment. Save the Login screen in your browsers 'Favourites' for immediate future access.

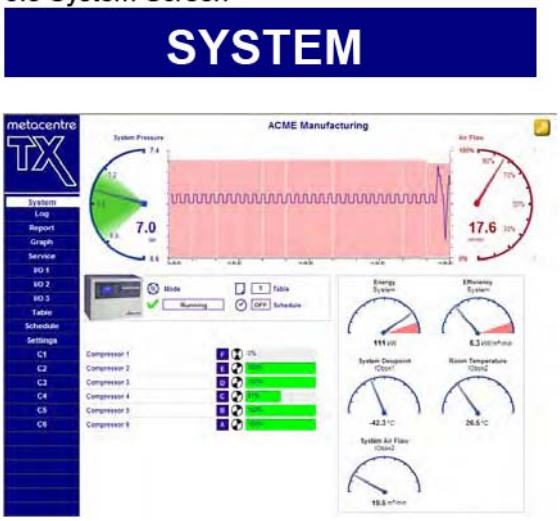
Choose a language from the drop down menu, enter an account 'User Name' and 'Password'; and click login.

- ***Login User Names and Passwords are case sensitive.***

- A maximum of 1 account with 'ADMIN' rights can be logged on to the Metacentre™ Cyber Console at any one time.

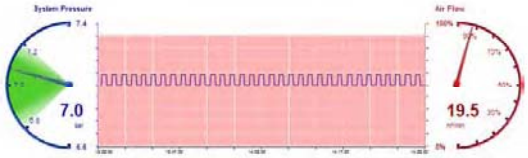
- A maximum of 5 accounts can be logged on to the Metacentre™ Cyber Console at any one time.

3.3 System Screen



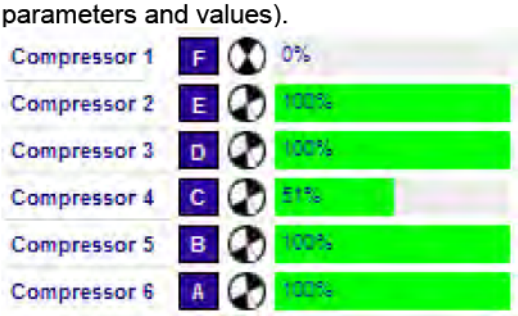
The 'System' screen can be regarded as the 'Home Page'.

System screen layout is designed to provide an overview of system key performance variables. The system pressure and flow are constantly displayed in the upper area of the page view.



System pressure is displayed to the left, while Air Flow is displayed to the right. System pressure is displayed in blue. The 'green zone' of the system pressure dial indicates 'target system pressure' at the dial mid-point and pressure tolerance settings from the respective Metacentre™ system controller. The pressure upper and lower scale is pre-determined by the respective pressure tolerance setting (Refer to the respective Metacentre™ system controller's Technical Manual for a detailed description of 'target system pressure' and 'tolerance'). The scale at the top and bottom of the pressure dial is also the scale used for the pressure graph. System flow is displayed in red. The scale at the top and bottom of the flow dial is also the scale used for the flow graph. Flow is derived either by calculation or from a physical flow meter connected to the Metacentre™ system. Scaling is a percentage of maximum available flow. A combined line pressure graph (blue) and flow graph (red) of the previous one hour recorded data is displayed between the pressure and flow dials. The graphs have gridlines at 5 minute intervals and time is displayed along the horizontal axis.

Status of the Metacentre™ system controller's parameters is perpetually displayed. Status, control mode, table in use and schedule status are displayed. (Refer to the respective Metacentre™ system controller Technical Manual for a detailed description of these parameters and values).

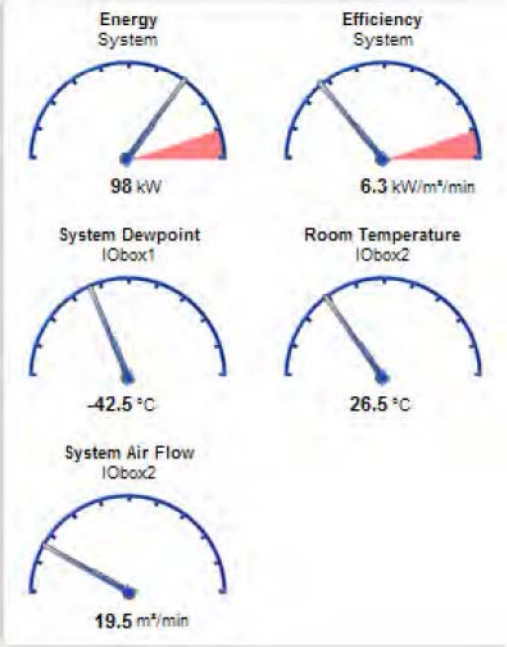


Below the Metacentre™ system controller 'status area, each compressor connected to the Metacentre™ system controller has a dedicated view area. The monitoring of compressor status, condition and event triggers can be monitored from here...

Compressor 1	Compressor name (user defined)
F	Metacentre™ system controller sequence allocation
51%	Percentage load, including part load output for variable speed/output compressors
	Compressor running (symbol is static when stopped, rotating when running or loaded)
Compressor 1	Compressor alarm
	Compressor service due (Cyber Console service function)
Compressor 1 F	Compressor trip

The following equipment conditions are derived by the Metacentre™ system controller. Refer to the respective Metacentre™ system controller Technical Manual for a defined explanation of each condition:

a) Metacentre™ system controller sequence status
b) Percentage loaded, including part load output for variable speed/output compressors
c) Compressor running
d) Compressor alarm
e) Compressor trip



Up to 6 gauge displays can be viewed at the system home page. 'Energy System' and 'Efficiency System' are derived by calculation and/or from a physical flow meter if connected to the Metacentre™ system. Both gauges seek to provide an indication of total system efficiency.

A further 4 gauges (3 shown in example) are displayed on the home page, each is user definable.

Data is gathered from distributed I/O (Input / Outputs) located around the Metacentre™ system and displayed in an intuitive and user friendly way. Here, analogue data from a flow meter, a temperature sensor and a dew point sensor are shown. Like compressor name & status conditions, gauge names, analogue input type, scaling, alarm and trip levels can be defined for each item of distributed I/O.

3.4 Log Screen

The Log screen retains a historical log of Alarm/Warning (A), Trip (T) and system (S) event conditions. Each event is logged chronologically, most recent first. You can filter event conditions by selecting the appropriate filter at the bottom of the log page.

System events are related to Metacentre™ TX / Cyber Console activities. For example, all Log-on and Log-off event details are recorded.

Alarm (Warning) and Trip events can be generated by any module on a Metacentre™ system network.

Date	Event date
Time	Event time
Module	Event location
Type	Event type
Description	Event description

The historical Log data is stored in text file (.TXT) format on the Metacentre™ TX platform SD card. Using the USB connection method this file can be readily copied from the SD card to a PC and viewed or manipulated as a text file using MS Notepad, Word or Excel for example.

 Print the displayed Log file

3.4.1 Events

- -

Metacentre™ TX Box / Cyber Console

TX	T	RS485 Error
TX	S	SMS: {SMSPhoneNumber + Email address}
TX	S	SMS: {SMSPhoneNumber}
TX	S	e-mail: {email address}
TX	S	Login: {username}
TX	S	Logout: {username}
TX	A	Real Time Clock

Metacentre™ System Controller

SYS	T	RS485 Error
SYS	T	Shutdown
SYS	A	Warning
SYS	A	Insufficient Capacity
SYS	S	T01…T06

Compressor 1 to 12

C1…C12	T	RS485 Error
C1…C12	T	Shutdown
C1…C12	A	Warning
C1…C12	A	Service Maintenance Off
C1…C12	A	Service Maintenance On
C1…C12	A	Service Maintenance

Metacentre™ I/O Box 1 to 12

B1…B12	T	RS485 Error
B1…B12	T	Di1…Di8: {I/O text}
B1…B12	T	Ai1…Ai4: {I/O text}
B1…B12	A	Di1…Di8: {I/O text}
B1…B12	A	Ai1…Ai4: {I/O text}

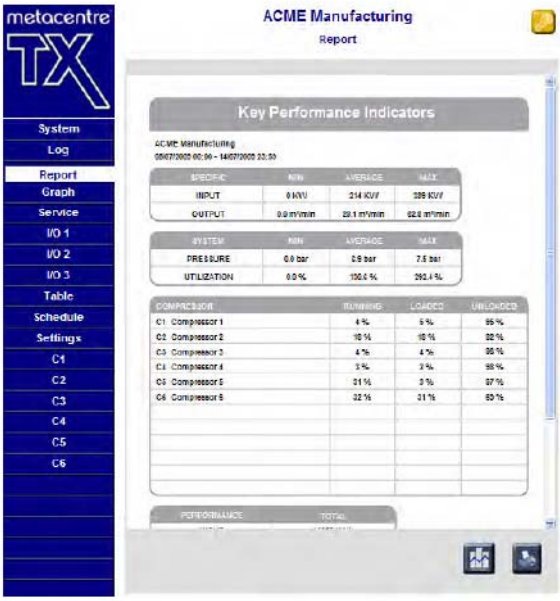
- -

Ai1-Ai4 : Analogue Input 1 to 4
Di1-Di8 : Digital Input 1 to 8

T : Trip/Shutdown/Error
A : Alarm/Warning
S : System Advisory Message

3.5 Report Screen

REPORT



The Report screen takes you to Metacentre™ Cyber Console's pre-defined 'Key Performance Indicator' (KPI) report. The report is designed as an 'executive summary' of system performance.

The report utilises either m^3/min or cfm, Bar or psi, m^3 or f^3 and kW/m^3/min or kW/cfm as defined by the unit of measure configuration.

- Take time to understand 'average page load' times in your specific installation environment and allow page loads to complete prior to proceeding with additional page load requests. A graph set or KPI report can take over half a minute.

- The accuracy of the REPORT data is dependent on the logged data files and the data content within the files. If log data for the report period is partly missing or otherwise disrupted (power to the Metacentre™ system lost or removed for example) the report data may be inaccurate or misleading...

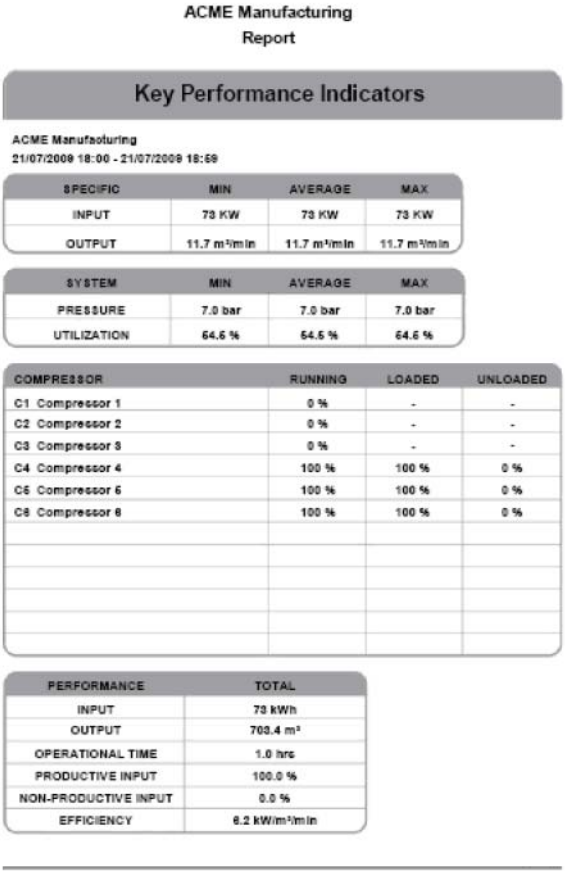
- Only connect to the Metacentre™ TX USB Port when necessary, as doing so will interrupt data logging!

- Once installed & commissioned, allow time for data to be logged and discourage future tampering or power cycling of the Metacentre™ TX, as doing will interrupt data logging!

If the Metacentre™ Cyber Console detects a missing log data file for the report period an exclamation mark triangle will be displayed and a report will not be generated. This feature will detect missing data log files only, the Metacentre™ Cyber Console is unable to distinguish between missing/disrupted and zero value data within a file.

Print the Report.

Navigates the user directly to the 'graph screen' which will be loaded & displayed at the same date range and resolution as the report itself. This allows the user to scan for graph data specific to the date range and resolution being reported.



ACME Manufacturing
Report

Key Performance Indicators

ACME Manufacturing
21/07/2009 18:00 - 21/07/2009 18:59

SPECIFIC	MIN	AVERAGE	MAX
INPUT	73 KW	73 KW	73 KW
OUTPUT	11.7 m³/min	11.7 m³/min	11.7 m³/min

SYSTEM	MIN	AVERAGE	MAX
PRESSURE	7.0 bar	7.0 bar	7.0 bar
UTILIZATION	64.6 %	64.6 %	64.6 %

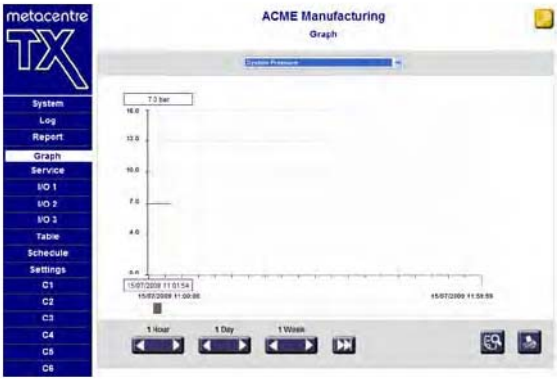
COMPRESSOR	RUNNING	LOADED	UNLOADED
C1 Compressor 1	0 %	-	-
C2 Compressor 2	0 %	-	-
C3 Compressor 3	0 %	-	-
C4 Compressor 4	100 %	100 %	0 %
C5 Compressor 5	100 %	100 %	0 %
C6 Compressor 6	100 %	100 %	0 %

PERFORMANCE	TOTAL
INPUT	73 kWh
OUTPUT	703.4 m³
OPERATIONAL TIME	1.0 hrs
PRODUCTIVE INPUT	100.0 %
NON-PRODUCTIVE INPUT	0.0 %
EFFICIENCY	6.2 kW/m³/min

Key Performance Indicators	
Item	**Description**
ACME Manufacturing	System name
Date	Report range
Specific power & flow data:	
Input (min, average, max)	System kW
Output (min, average, max)	m³/min, cfm
System data:	
Pressure (min, average, max)	Bar, psi
Utilization (min, average, max)	Percentage of max
Compressor:	
Compressor 1	name
Running	Percentage running
Loaded	Percentage loaded
Unloaded	Percentage unloaded
Performance:	
Input	Total kWh
Output	Total m³, f³
Operational time	Operational time within report range
Productive input	Percentage, productive running
Non-productive input	Percentage, non-productive running
Efficiency	kW/m³/min, kW/cfm

3.6 Graph Screen

GRAPH



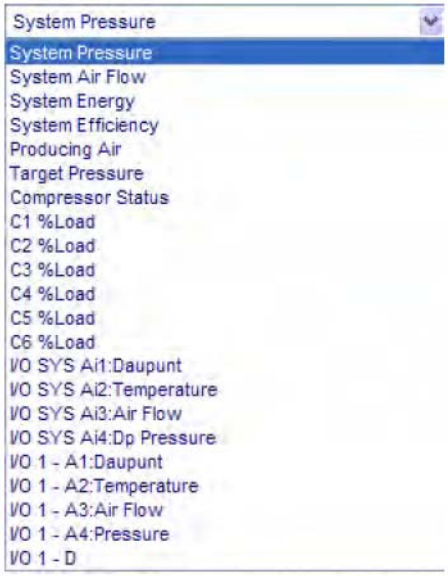
Navigating to the Graph screen loads Metacentre™ Cyber Console's advanced graphing tool. Once loaded, all data available for viewing as a graph can instantly be viewed at the set resolution. The initial page load resolution is 1 hour. The initial page data is the latest available (most recent).

① Take time to understand 'average page load' times in your specific installation environment and allow page loads to complete prior to proceeding with additional page load requests. A graph set or KPI report can take over half a minute.

A number of graphs are available…

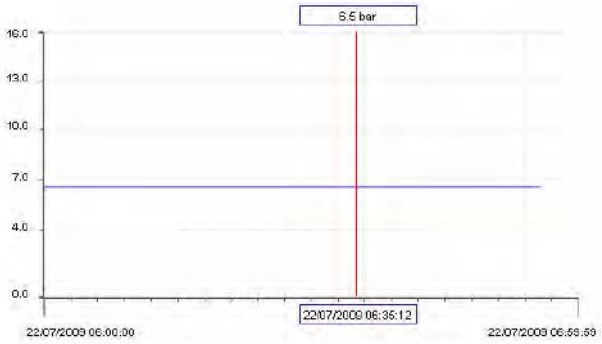
System Pressure (default)
System Air Flow (default)
System Energy (default)
System Efficiency (default)
Producing Air (default)
Target Pressure (default)
Compressor Status (default)
Compressor C1 to C12 %Load (default)
I/O SYS Ai1 – Ai4 (equipment dependent)
I/O 1 to 3, Ai1 to Ai12 (equipment dependent)
I/O 1 to 3, D1 to D16 (equipment dependent)

Navigating to a 'new data resolution' (hour, day week) loads all data for all available graphs at the same time.



The drop down menu provides access to all available graph data. Select the required view.

Once a graph has loaded, you can instantly review **all available graphs** at the set resolution without a new download cycle.



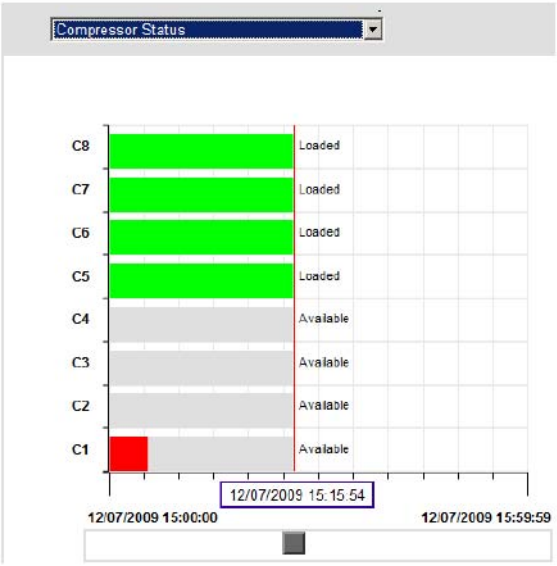
Vertical axis	Unit, scaled relative to graph loaded
Horizontal axis	Time, scaled relative to resolution. Graph start and end date and time are also shown
7.0 bar	Axis point value
15/07/2009 11:01:54	Axis point date & time

 Move chronologically forward or back at the respective resolution (hour, day or week).

 Move to the most recent data available at the respective resolution (hour, day or week).

Drag the slider bar left or right to move the graph axis point. Dragging the slider bar to the extreme ends of the graph will load the next (right) or previous (left) available graph.

Compressor Status Graph:



The status of each compressor is displayed as a horizontal bar graph. Historical status is indicated by colour.

Grey : Standby, not running, available
Yellow : Offload
Green : Onload
Amber : Alarm (Warning)
Red : Trip / Shutdown / Not Available

Digital Status Graphs:
A similar principle to the compressor status graph is used for digital I/O status graphs. In the instance of a digital I/O the user defined colour of the digital I/O indication, as used on the I/O screens, is utilised to indicate the digital ON state.

 Report; navigates the user directly to the report screen at the same date range and resolution as the graph (See Report screen). This allows user to produce a KPI report specific to the set graph time period.

 Print the graph.

3.7 Service Screen

SERVICE

Service screen is Metacentre™ Cyber Console's scheduled service adviser. Use this to set up when service (routine maintenance) is due on each air compressor connected to the Metacentre™ system controller. Remote service Due messages can be generated (see User Accounts, configuration).

When a compressor's Managed Hours reaches the set 'Service Due' hours a service due alarm is generated.

Compressor 1

Compressor name (user defined in settings).

Managed Hours:
The Metacentre™ management system records the hours run by each compressor independently from the compressor itself. This is done using the 'running' state feedback from the compressor. This feature accommodates for all compressor controller types and controller integration methods.

Ensure Managed hours are synchronised with the respective air compressor hour meters for accurate use of the 'Service' feature. Consult the respective Metacentre™ system controller Technical manual for guidance.

Note: Consult original equipment manufacturers handbook or your service provider for service interval advice.

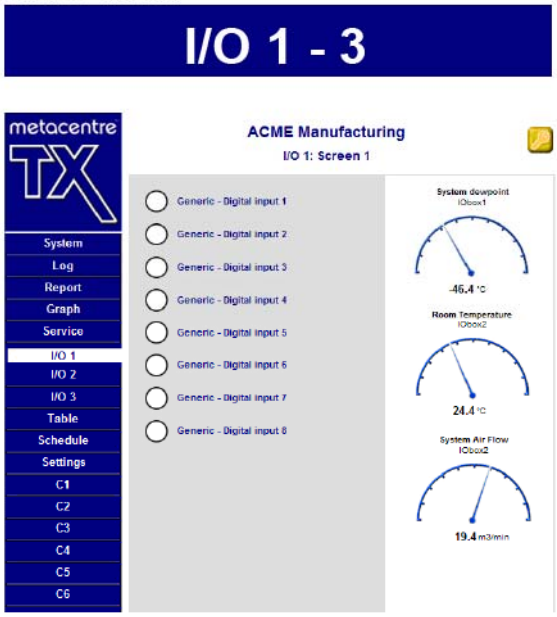
Add 'Service interval' value to 'managed hours' value to generate a new 'Service Due' time.

Setting the Service interval value early may provide time to arrange service. For example, if service is due in 2,000 hours a value of 1,900 will provide 100 hours advance warning.

Enter and save any adjustments.

Note: Users with VIEW access rights will **not** be able to modify any values or settings.

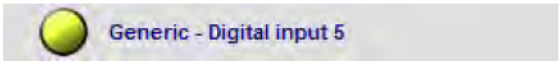
3.8 I/O' Screen



Three 'I/O' screens are provided; I/O 1, I/O 2 & I/O 3. The purpose of each screen is to provide individual I/O environments (e.g. 'Compressor house I/O monitoring' or 'Factory Line 1 I/O monitoring').

Each I/O Screen provides an identical quantity of I/O. Data is gathered from distributed I/O located around the Metacentre™ system and displayed in an intuitive and user friendly way.

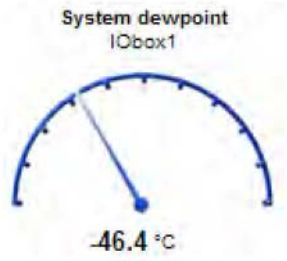
Digital input name (user defined in configuration settings), DI state = OFF



Digital input name (user defined in configuration settings), DI state = ON (yellow example).

DI state 'OFF' colour = White

 DI state 'ON' colours Blue, Green, Yellow or Red (individually user defined in configuration settings).



Analogue input name, location, value including unit of measurement displayed on a scaled 'gauge' indicator.

Each I/O screen can display up to 16 digital inputs or outputs and up to 12 analogue inputs.

A Digital indicator can be any on/off type data available on the Metacentre™ system network:

- Digital Input State
- Digital Input Alarm (Warning)
- Digital Input Trip
- Analogue Input Alarm (Warning)
- Analogue Input Trip
- Relay Output State

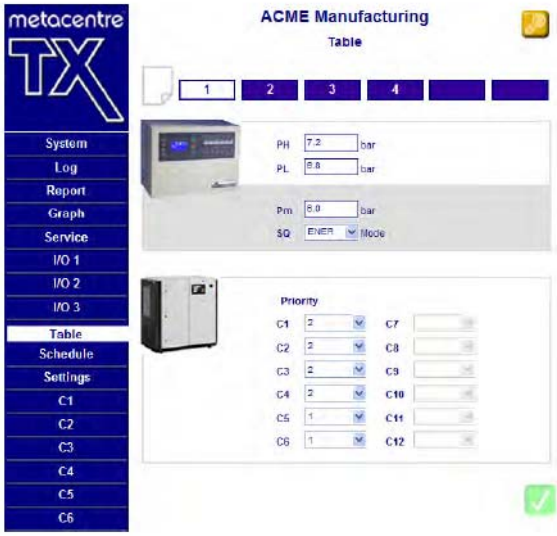
An Analogue value can be derived from any value available on the Metacentre™ system network including values from networked AirMaster™ compressor controllers. Analogue displays can be any data consisting of a numeric value including pressure, temperature, hours run or digital input pulse count values for example.

For an hours or digital input pulse count value the gauge pointer will show the value in comparison to the defined minimum and maximum settings; this in itself may have limited meaning. The actual numeric value displayed beneath the gauge is important in this instance.

As I/O is added to the Metacentre™ system and configured to the Metacentre™ Cyber Console, it can also be data logged and graphed using the 'Graph' tool function. The ON state of each defined digital I/O will be shown on a status graph in the user defined I/O screen indication colour.

3.9 Table Screen

TABLE

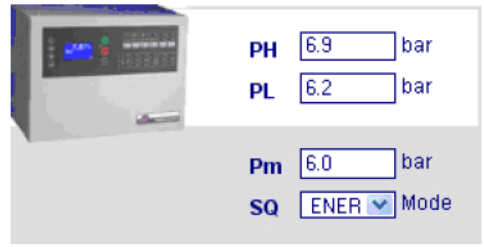


Depending on the Metacentre™ system controller in use, up to 6 tables are accessible.

Each table is a unique 'Management system control strategy'. The table screen allows Users to view and modify each accessible table. Refer to the respective Metacentre™ system controller Technical Manual for a detailed description of these settings.

Table selection area

Table selected = Table 1



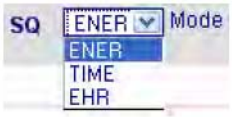
Metacentre™ system controller settings

Metacentre™ system controller P High setting.

Metacentre™ system controller P Low setting.

Note: the system 'Target' pressure will be the mid-point between these values (=6.55 bar)

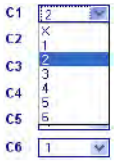
Metacentre™ system controller P Minimum setting.



Metacentre™ system controller Control Mode.

Refer to the appropriate Metacentre™ management system controller manual for detailed information on 'SQ' control modes. Control mode types shown in the dropdown menu will differ, dependant on Metacentre™ management system controller model.

Metacentre™ system controller Compressor priority settings.



Priority selection: select new setting from dropdown menu.

X = compressor unavailable
Priority 1 = highest priority

Enter and save any adjustments.

Note: Users with VIEW access rights will **not** be able to modify any values or settings.

3.10 Schedule Screen

SCHEDULE

The schedule screen provides Users with the ability to arrange scheduled changes in the Metacentre™ system control strategy as well as scheduling system shutdown periods.

Period	1 = Mon 2 = Tue 3 = Wed 4 = Thu 5 = Fri 6 = Sat 7 = Sun 8 = Each working day of the week, excluding Saturday and Sunday 9 = Each day of the week. - (dash) = deactivate
Hours	00 - 23
Mins	00 - 59
Table	X = System off T01 – T06

 Enter and save any adjustments.

 Note: Users with VIEW access rights will **not** be able to modify any values or settings.

3.11 Settings Screen

SETTINGS

The settings screen has two distinct page styles, one for a user with 'View' or 'User' rights and another for 'Admin'.

① User rights (VIEW, USER or ADMIN) are Metacentre™ Cyber Console account 'rights' settings and are not associated with any local computer administration rights (See Metacentre™ Cyber Console settings, 'Accounts' screen).

VIEW / USER Style:

ADMIN Style:

Users with 'User' access rights are able to modify some parameters on the page.

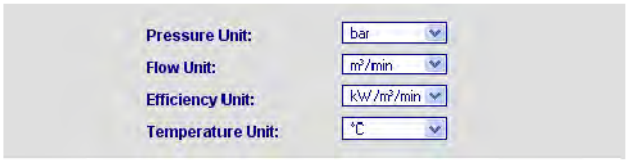
Users with 'Admin' rights are able to modify all parameters on the page. In addition, users with administrator rights are able to access additional configuration screens.

Configuration screens are accessible by using the red navigation area on the left of the browser window. The 'red' settings navigation area is present in all configuration page views.

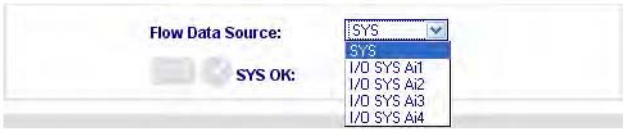
Once finished, navigate away from the 'configuration settings' area by selecting the blue 'SYSTEM' screen.

- Metacentre™ system status control System Start, Stop, Reset
- Metacentre™ schedule function ON, OFF
- Metacentre™ Tolerance setting
- Metacentre™ Damping setting

- Metacentre™ Cyber Console Installation name (appears at top of each screen page)
- Metacentre™ TX Language
- Metacentre™ Management system model



- Cyber Console pressure display units
- Cyber Console flow display units
- Cyber Console efficiency display units
- Cyber Console temperature display units



Cyber Console flow value data source.

Select the location of the respective analogue input from the dropdown menu.

SYS: calculated by the Metacentre™ Cyber Console using available system data and compressor specific data settings.

I/O SYS Ai1/Ai4: Actual monitored value from a Metacentre™ management system controller equipped with a flow monitoring facility.

SYS OK 'hour' – the time (hour) each day a system OK message will be sent.

A SYS OK message consists of an e-mail containing system performance KPI report data. This feature provides daily KPI performance reports and, by definition, an indication that the system is OK and functioning normally.

- Date format
- TX / PC real time clock

Sync Metacentre™ TX with PC Date/Time by pressing the sync button. Remember to save the new sync time by clicking the Enter and Save button.

Refer to the appropriate Metacentre™ management system manual for detailed hardware information.

Enter and save any adjustments, including PC time sync function.

Note: Users with VIEW access rights will **not** be able to modify any values or settings.

Cookies:
Although Cyber Console is hosted on the Metacentre™ TX platform, and not on the PC, all user specific language and preference settings are stored on the PC as a cookie. This is common practice for web based applications and your PC will be setup to accommodate for this. All 'cookies' (preference settings files) will be stored on your PC in a dedicated memory location. If the 'cookies' on your PC are deleted the Cyber Console will revert to default language and preference settings.

3.12 'C1 – C12' screen

The compressor screen navigation buttons are aligned with the 'System' screen compressor status bars.

The number of visible 'C' compressor navigation buttons will correspond with the number of compressors configured as part of your Metacentre™ system installation.

To view additional compressor status and information click the applicable 'C' compressor navigation button.

Manufacturer, Model. Typically the Original Equipment Manufacturer's brand name, model number and current compressor status.

'Control' allows Users with permissible access rights to select a compressor for 'local' or 'remote' operation; direct from the Metacentre™ Cyber Console.

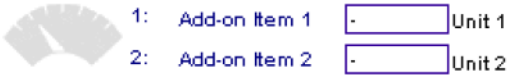
- This feature must first be enabled by a User with administrator rights in the applicable 'C' configuration settings.
- Once configured for use, only users with 'User' or 'Admin' rights have access to the remote / local control feature.

In 'local' the compressor becomes unavailable to the Metacentre™ system controller. Local 'Start', 'Stop' and 'Reset' functions become active.
Note: the compressor must be started before returning to 'remote' control.

Managed hours; Metacentre™ system run hours value.

Capacity, Package Power, Unloaded Power and Rated Pressure relate to the original equipment manufacturers performance data for the compressor.

Interface type refers to the connectivity between the compressor and the Metacentre™ system controller.



Add on items are addressable data registers available from Air RS485 OUS compatible compressor controllers. Available with I-485 or V-485 connectivity types only. Up to 10 addressable data registers can be monitored, providing compressor specific data.

- Only compressor controllers connected to the Metacentre™ system using Air RS485 OUS serial communications can be configured to display add on items.
- A listing of the compressor controller's addressable data registers is not included with Metacentre™ Cyber Console and must be purchased separately.


Enter and save any adjustments.


Note: Users with VIEW access rights will **not** be able to modify any values or settings.

4: Metacentre™ Cyber Console Configuration Screens

4.1 Configuration Screens

Additional 'configuration' screens are accessible to users with 'ADMIN' rights. Users with 'ADMIN' rights are able to access additional configuration screens by using the 'red' navigation area to the left of the browser window. The 'configuration settings' navigation area is present in all configuration page views. To initially access the configuration screens navigation area select 'settings'.

SETTINGS

To exit 'configuration' screens and return to the normal navigation screens at any time, select the 'blue' settings screen button.

4.2 Accounts Screen

ACCOUNTS

- Only one ADMIN rights user can be logged on to Metacentre™ Cyber Console at any one time.
- A maximum of 5 users can be logged on to Metacentre™ Cyber Console at any one time.

On the Accounts screen you can create new, modify existing and remove User accounts as well as set remote message filters.

4.2.1 To Modify or Create New User Account

Metacentre™ Cyber Console has three account types. Default Login names, password and permissible rights for each are as follows...

VIEW: view only, unable to make any operational adjustments or implement any changes; no access to configuration.

User Name: **view**
Password: **pwview**

USER: able to make operational adjustments; no access to configuration.

User Name: **user**
Password: **pwuser**

ADMIN: full access including configuration.

User Name: **admin**
Password: **pwadmin**

Login User Name and Password is case sensitive.

As a security precaution, default login names and passwords should be changed.

The default login accounts are shown top left of the page view.

To create a new account, complete account configuration details first, as described below, then click 'plus' to create the account.

To remove an account, highlight the account then click 'minus'.

To modify an existing account, highlight the account. The account details will be displayed. Adjust account settings as required then click 'plus'. The account will be over-written with the new settings.

Edit 'User Name' and 'User Password'.

- ***Login User Name and Password is case sensitive.***
- If the User Name already exists the existing account will be modified. If the User Name is not listed a new account will be created.

Use the 'Access Level' dropdown menu to modify the account type.

- Account types determine User rights

Enter the account user's email address where the Metacentre™ TX will direct email messages generated for output. In SMS Phone Number, enter a GSM phone number (Global System for Mobile communications) where the Metacentre™ TX will direct SMS messages generated for output. Check the SMS Text box to confirm that the SMS messages should be output.

- Metacentre™ TX will direct SMS messages via the SMS service centre number (service provider) as defined in the Diagnostics tab (See section 4.3)

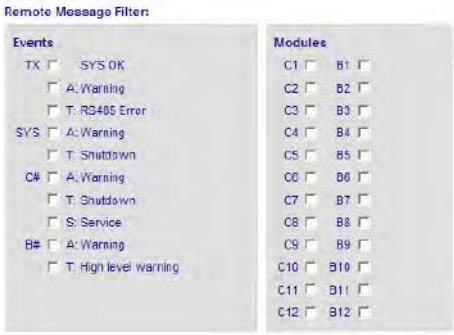
The 'Alert Server' setting is a 'legacy product' feature. Only select the ALERT Server feature if you operate an ALERT Server product and if SMS messages are intended for output to an Alert Server product.

Next, navigate to the Remote Message Filter and check filters to configure which event conditions will generate messages to be sent to the Account User.

4.2.2 Remote Message Filter Settings.

Select the message types required.

- A more comprehensive understanding of Remote Message Filters can be established by consulting the respective Metacentre™ product Technical Manual



TX

The Metacentre™ TX unit (not including any other Metacentre™ system units on the network).

SYS OK:

Outputs daily system OK 'heartbeat' advisory message / system report.

A: WARNING

Any Metacentre™ TX Alarm (Warning) condition.

T: RS485 Error

Data communications loss with the Metacentre™ management system and/or AirRS485 system network.

SYS

A: WARNING

Any Metacentre™ management unit Alarm (Warning).

T: SHUTDOWN

Any Metacentre™ management unit shutdown.

C#

A: WARNING

Any compressor related Alarm (Warning)

T: SHUTDOWN

Any compressor related Trip/Shutdown.

S: SERVICE

Compressor Service Due Warning

B#

A: WARNING

Any I/O Box related Alarm (Warning)

T: SHUTDOWN

Any I/O Box related Trip/Shutdown.

COMPRESSORS C1 to C12

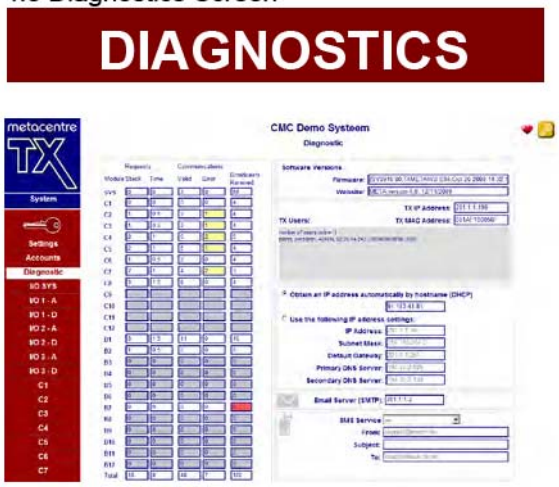
Select which compressor(s) to receive A, T or S messages from.

I/O MODULES B1 to B12

Select which I/O Box unit(s) to receive A or T messages from.

Enter and save any adjustments.

4.3 Diagnostics Screen



4.3.1 AirBus RS485 Network Diagnostics

Module	Requests: Stack	Requests: Time	Communications: Valid	Communications: Error	Broadcasts Received
SYS	0	0	3	0	56
C1	0	0	0	0	4
C2	1	0.5	3	1	4
C3	1	0.5	3	1	4
C4	2	1	6	2	5
C5	2	1	5	1	4
C6	1	0.5	3	0	4
C7	2	1	4	2	3
C8	3	1.5	8	0	4
C9					
C10					
C11					
C12					
B1	3	1.5	11	0	10
B2	1	0.5	2	0	8
B3	0	0	0	0	0

Requests:
Module Stack:
The number of data requests waiting to be sent.
Time:
Estimated time, in seconds, required to clear all waiting data requests.

Communications:
Valid:
The number of good 'valid' communications in the last 60 seconds.
Error:
The number of bad 'invalid' communications in the last 60 seconds (should not exceed 2)

2 The box will turn yellow if errors occur.

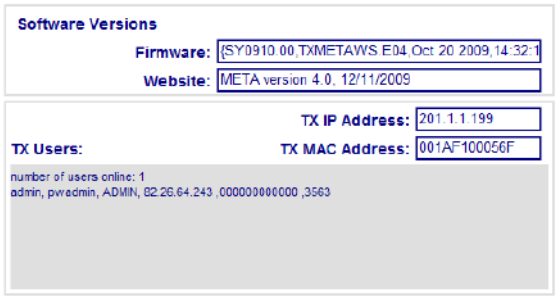
Broadcasts Received:
The number of valid broadcast messages received in the last 60 seconds.

Guidlines:

Metacentre™ Management Controller	58
Metacentre™ I/O, CX	10
Metacentre™ EX, DX	5
AirBus RS485 Compatible Compressor	5

0 The box will turn red if no broadcasts are received. This indicates the module is off line, powered down or the network communications link to the module has been disrupted/broken.

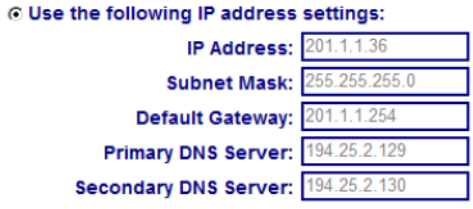
4.3.2 Network Connectivity Configuration



Software Versions, TX IP and MAC address: for information only.

TX Users:
Shows details for user(s) currently logged on to the Metacentre™ TX.

The Metacentre™ TX can be configured to obtain an IP address automatically if the LAN/WAN network is equipped with DHCP. This method allows the use of an alphanumeric hostname (e.g. CyberConsole1). Enter the name in the edit box.



Alternatively the Metacentre™ TX can be configured with a fixed IP Address and subnet mask, including default gateway and DNS server addresses.

The Metacentre™ TX is supplied in fixed IP address mode:

IP Address **192.168.1.2**
Subnet Mask **255.255.255.0**

Consult your network administrator or service provider for advice.

4.3.3 Email Message Configuration

Enter the IP address of the network Email Server (for outgoing Email messages only).

4.3.4 SMS by Internet Email

To configure the Metacentre™ TX to output SMS messages using an internet SMS messaging service provider.

- Create an account with a provider who offers an Email to SMS service.
  For example: www.txtlocal.co.uk
  You will need an email address and mobile phone number to create an account.
- Select 'Email to SMS' function from the SMS Service dropdown menu.
- Enter your account email address (same address that is used to create the account with the provider) and the provider's email address.
  Note that characters prior to @ are of no importance (the phone number entered in the account menu will be used automatically as a prefix).
  Note: some providers need a subject (check with provider's specification).
  For example; Enter the Site/Installation name.
- Go to the Account configuration screen and select the appropriate user account.
- Enter the user's mobile telephone number. (check provider's specification for country code prefix settings).
- Activate the 'SMS TEXT' function.
- If required, also activate the 'SMS SYS OK' function.
- Select the necessary Events and Modules from the Remote Message Filter.

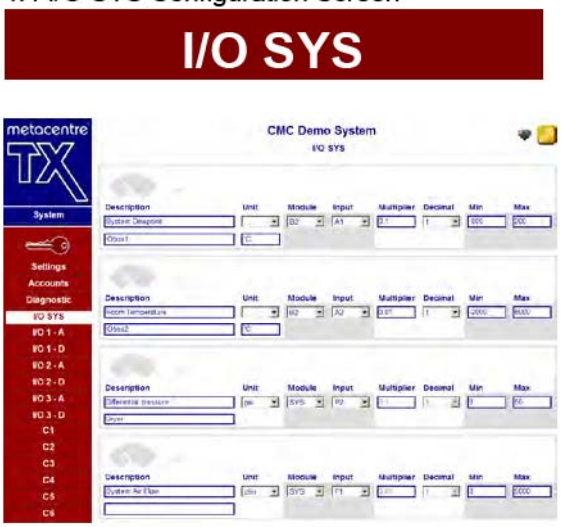
4.3.5 SMS by landline Phone modem

To configure the Metacentre™ TX to output SMS messages using the landline phone modem set the SMS Service dropdown menu to "- - -" (dashes).

On the Accounts configuration screen enter the landline SMS messaging service provider's phone number.

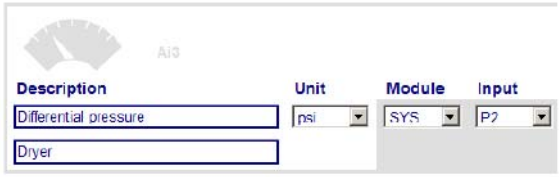
Enter and save any adjustments.

4.4 I/O SYS Configuration Screen



The SYSTEM screen has four user configurable analog gauge displays. When configured the gauge display(s) will appear on the SYSTEM screen and the values will also be data logged.

4.4.1 To Configure a Gauge Display



Description: Text appears above the gauge; upper line in bold.

Unit: The 'unit' text is displayed next to the value below the gauge.

Module:
Select the Metacentre™ network module where the data is to be obtained:
SYS = Metacentre™ management controller
B1-B12 = Metacentre™ I/O Box 1 to 12

Input:
Select the analog input of the module (e.g. P2 on a Metacentre™ XC can provide a differential pressure, dependant on setup)
Metacentre™ I/O Boxes have four totally configurable analog inputs Ai1 to Ai4.

Multiplier:
Modifies the value received from the module. For example; if the value received is in milliBar units and the required gauge display needs to be in Bar, enter "0.001". A value of 1000 mBar will be displayed as 1.0 Bar.

Examples, to convert:

mBar to Bar	0.001, decimal '1'
mBar to psi	0.0145, decimal '0'
Bar to psi	14.5, decimal '0'
psi to Bar	0.069, decimal '1'

Decimal:
Select the number of decimal places to be displayed.

Min:
Minimum gauge value setting. This setting can be adjusted to make the gauge pointer show a narrow range if required. This setting influences the gauge pointer display only and has no effect on the displayed value below the gauge, or the data logged value.

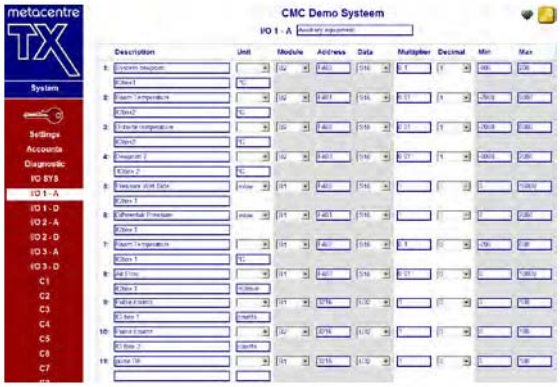
Max:
Maximum gauge value setting. This setting can be adjusted to make the gauge pointer show a narrow range if required. This setting influences the gauge pointer display only and has no effect on the displayed value below the gauge, or the data logged value.

Example;
If a particular pressure is critical, for example 7.0 Bar, the min and max gauge values can be set to make the gauge show between 6.9 to 7.1 Bar across the range of the gauge. When pressure is at, or below, 6.9 Bar the gauge will show minimum. When pressure is at, or above, 7.1 Bar the gauge will show maximum. The gauge will show mid-point at 7.0 Bar. The pressure value below the gauge will still show all actual values regardless of the min and max settings.

 Enter and save any adjustments.

4.5 I/O Analog Configuration Screens

I/O - A

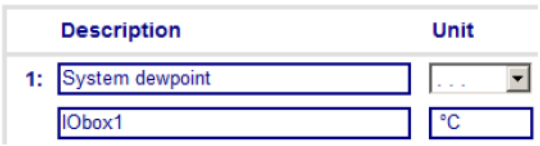


There are three individual I/O screens (I/O 1 to I/O 3). Each screen can be configured with up to 12 Analog value gauges.

The value of each configured gauge will also be data logged.

Enter a description for the I/O screen

4.5.1 To Configure a Gauge Display



Description: Text appears above the gauge; upper line in bold.

Unit: The 'unit' text is displayed next to the value below the gauge. Select from the dropdown menu or enter directly in the 'Unit' text box. The selected 'unit' text has no influence on the displayed value.

Note: AirBUS RS485 data communication values will be supplied in a defined unit of measure; you must work in this unit of measure or use the 'multiplier' setting to manipulate the value to an alternative unit of measure.

Module:
Select the Metacentre™ network module where the data is to be obtained:
SYS = Metacentre™ management controller
B1-B12 = Metacentre™ I/O Box 1 to 12
C1-C12 = Compressor 1 to 12

Note: An AirBUS RS485 data communications listing for each product will be required, this will contain address, data type and unit of measure definitions. Available separately; consult your Metacentre™ product supplier.

Address:
Enter the start address, in Hexadecimal (HEX), for the data required. Check the data communications listing for the applicable product.

Data:
Enter the data type for the data required. Check the data communications listing for the applicable product.

U8	8bit, 1 byte, Unsigned
U16	16bit, 2 byte, 1 word, Unsigned
U32	32bit, 4 byte, 2 words, Unsigned
S8	8bit, 1 byte, Signed
S16	16bit, 2 byte, 1 word, Signed
S32	32bit, 4 byte, 2 words, Signed

Multiplier:
Modifies the value received from the module. For example; if the value received is in milliBar units and the required gauge display needs to be in Bar, enter "0.001". A value of 1000 mBar will be displayed as 1.0 Bar.

Examples, to convert:

mBar to Bar	0.001, decimal '1'
mBar to psi	0.0145, decimal '0'
Bar to psi	14.5, decimal '0'
psi to Bar	0.069, decimal '1'

Decimal:
Select the number of decimal places to be displayed.

Min:
Minimum gauge value setting. This setting can be adjusted to make the gauge pointer show a narrow range if required. This setting influences the gauge pointer display only and has no effect on the displayed value below the gauge, or the data logged value.

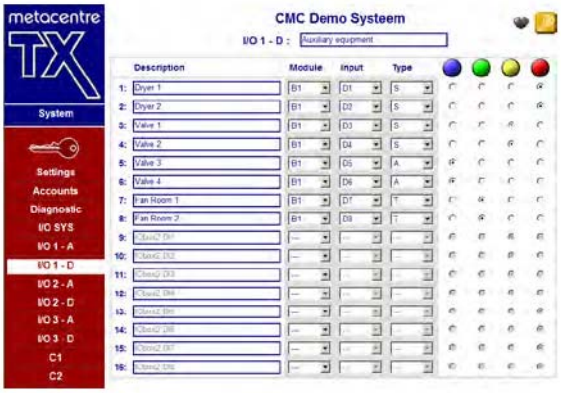
Max:
Maximum gauge value setting. This setting can be adjusted to make the gauge pointer show a narrow range if required. This setting influences the gauge pointer display only and has no effect on the displayed value below the gauge, or the data logged value.

Example;
If a particular pressure is critical, for example 7.0 Bar, the min and max gauge values can be set to make the gauge show between 6.9 to 7.1 Bar across the range of the gauge. When pressure is at, or below, 6.9 Bar the gauge will show minimum. When pressure is at, or above, 7.1 Bar the gauge will show maximum. The gauge will show mid-point at 7.0 Bar. The pressure value below the gauge will still show all actual values regardless of the min and max settings.

 Enter and save any adjustments.

4.6 I/O Digital Configuration Screens

I/O - D



There are three individual I/O screens (I/O 1 to I/O 3). Each screen can be configured with up to 16 Digital indications.

The state of each configured Digital indication will also be data logged.

If a Digital indication is not setup (left blank) it will not show on the applicable I/O screen. It is possible to separate groups of Digital indicators on a screen be using 'black' indications as group separators.

Enter a description for the I/O screen.

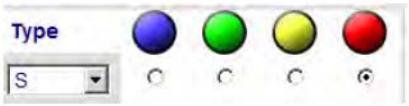
4.6.1 To configure a Digital Indication

Enter a description for the Indication.

Module:
Select the Metacentre™ network module where the data is to be obtained:
SYS = Metacentre™ XC controller
B1-B12 = Metacentre™ I/O Box 1 to 12

Input:
Select the module Input.
For a Metacentre™ I/O Box you can select an S, A or T state for an Analogue or Digital input, or a Relay output state (R1 to R6).

For a Metacentre™ XC management controller only the actual state of the four auxiliary Digital inputs (D1 – D4) can be selected.



Type:
For a Metacentre™ I/O Box Analogue inputs and Digital inputs can be setup to indicate a number of different states type.
For a Metacentre™ XC management controller only the actual state of the four auxiliary Digital inputs can be detected.
Select the type required.

" – "	Actual Input State; ON or OFF
S	Signal Indication; ON or OFF
A	Alarm (Warning)
T	Trip, Shutdown

Indicator Colours:

Any one of the four available indicator colours can be selected to indicate the Digital state regardless of type or meaning.

Example/Suggested Indication Meanings:

Valve Open, ON, OK

Equipment Running, ON, OK

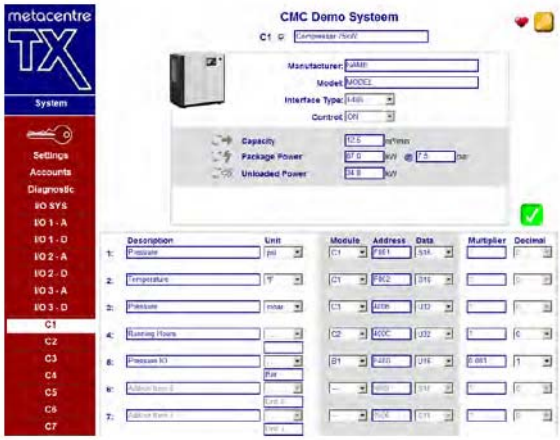
Alarm, Warning, Attention

Trip, Shutdown, NOT OK, OFF

Enter and save any adjustments.

4.7 Compressor Configuration Screens

C1 - C12



Each individual compressor in the system must be configured separately.

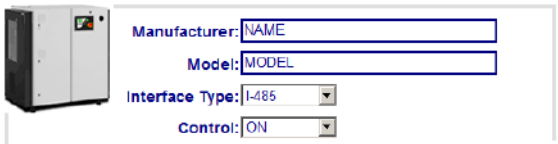
Each compressor must be assigned a number (from 1 to the maximum number of compressors in the system). For a Metacentre™ managed system the compressor number must match the number assigned on the Metacentre™ management controller.

Each compressor must be added sequentially, from 1 (C1) upwards. When accessing the Cyber Console using 'ADMIN' rights a compressor can be added by clicking the last (dimmed) 'C' compressor number on the navigation list.

Note: The compressor specific data or performance data will be required. Examine the compressor data plate, data sheet or consult your compressor supplier or service provider for this information.

4.7.1 Compressor Data

Enter a description for the compressor.



Enter the Compressor Manufacturer and Model.

Interface Type:
Enter the method used to integrate the compressor with the Metacentre™ management system.

I-PCB Interface PCB (i-PCB)
I-485 AirBUS RS485 communications; fixed speed or fixed output Load/Unload.
V-485 AirBUS RS485 communications; varible speed or step/variable output Load/Unload.

Note: The integration type selected will determine available features and functions.

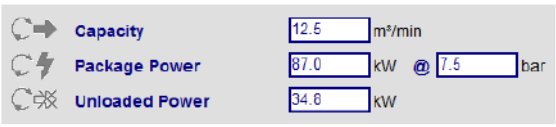
Control:
If compressor integration type is AirBUS data communications (I-485 or V-485), the control functions will be available.

Local Removes the compressor from Metacentre™ management system control. The compressor will operate standalone.

Remote Returns the compressor to Metacentre™ management system control.
Note: the compressor must be started before selecting 'remote'.

Start Stop Reset

Data communications start/stop control must be enabled (set) on the compressor controller. See the compressor controller manual for details.



Capacity:
Enter the output capacity while fully loaded, at maximum speed or output.

Package Power:
Enter the compressor 'package power' at full load, maximum speed or output. This value should represent the 'actual' power consumed; this is not the same as the nominal 'kW' rating. For example; a 75kW compressor will probably consume around 87kW when fully loaded.

Also enter the rated pressure at which the package power is quoted. For example; most specific data sheets will quote maximum package power at a particular pressure. This is important as loaded package power will change with delivery pressure.

Unloaded Power:
Enter the compressor power when off load, not producing air. This differs from minimum speed or minimum output that will be a higher power.

If the compressor type, and selected system integration type, is variable speed or output (V-485) two additional items of data will be required.

Minimum Capacity:
Enter the output capacity while loaded, at minimum speed or output.

Minimum Power:
Enter the package power while loaded at minimum speed or output.

4.7.2 Additional Data Items

For compressors integrated to the system using AirBUS data communications (I-485 or V-485), up to 8 additional data item values can be configured.

An additional data item can be any accessible value from an AirBUS compatible compressor controller or any other product connected to the AirBUS network (for example; Metacentre™ I/O Box).

Configured additional data items will also be data logged.

Note: An AirBUS data communications listing for the compressor controller, or system module, will be required. This will contain address and data type definitions. Available separately; consult your compressor supplier or service provider.

Enter a description for the Indication.

Select the unit type from the 'unit' dropdown menu.

Module:
Select the Metacentre™ network module where the data is to be obtained:
SYS = Metacentre™ management controller
B1-B12 = Metacentre™ I/O Box 1 to 12
C1-C12 = Compressor 1 to 12

Address:
Enter the start address, in Hexadecimal (HEX), for the data required. Check the data communications listing for the applicable product.

Data:
Enter the data type for the data required. Check the data communications listing for the applicable product.

U8	8bit, 1 byte, Unsigned
U16	16bit, 2 byte, 1 word, Unsigned
U32	32bit, 4 byte, 2 words, Unsigned
S8	8bit, 1 byte, Signed
S16	16bit, 2 byte, 1 word, Signed
S32	32bit, 4 byte, 2 words, Signed

Multiplier:
Modifies the value received from the module. For example; if the value received is in milliBar units and the required gauge display needs to be in Bar, enter "0.001". A value of 1000 mBar will be displayed as 1.0 Bar.

Examples, to convert:

mBar to Bar	0.001, decimal '1'
mBar to psi	0.0145, decimal '0'
Bar to psi	14.5, decimal '0'
psi to Bar	0.069, decimal '1'

Decimal:
Select the number of decimal places to be displayed.

Enter and save any adjustments.

Technical Assistance:

Please read this manual first. If you require further technical assistance please contact your local dealer.

Stamp with name and address of local dealer:

Manufacturers identification:

Compressor & Machine Controls NV
Industriepark De Bruwaan 37B
B - 9700 Oudenaarde
Belgium

Tel: +32 (0) 55237090
Fax: +32 (0) 55457518
Email: sales@cmcnv.be